

## *Relationships among textbook usage and cognitive-motivational constructs*

W. Pitt Derryberry and Steven R. Wininger

*This study examined relationships between students' use of their text and motivational constructs linked to self-regulation: need for cognition, goal orientation, and self-determination. Participants were 234 Educational Psychology students. In the Fall semester students were assigned one of two textbooks whereas in the Spring they were allowed to choose between two textbooks. A basic versus more advanced text were chosen to create a contrast. We hoped that the motivational constructs considered would differentiate the selection and usage of each text. The variables of interest did differentiate choice of text, who read versus did not read the text, and the approach taken when reading the text (e.g., skimming, reading, reading and making notes). Specific effects, discussion, and suggestions for future research are delineated.*

**Keywords:** Textbooks, Textbook Selection, Motivation, Reading Motivation, Need-for-Cognition, Goal Orientation, Self Management

Post-secondary educators have many choices when it comes to adopting textbooks for their courses. Post-secondary education faculty are well aware of this, as frequent emails, phone calls, and "drop-ins" from textbook representatives have become a routine part of life in academe. It is also obvious in other ways. For example, a Google search of the term "textbook publishers" will yield what seems like an inordinate number of websites for textbook publishers and databases listing information on textbook publishers. In addition to scholars sharing their latest findings and insights, other key attendees at professional conferences include representatives of textbook publishers promoting their newest offerings and editions.

Given the vast number of post-secondary textbooks available along with their increasing prices, textbook selection is something that any instructor should take seriously. In choosing a text, the instructor must determine which texts provide the most complete and up to date information about a specific discipline. Given the numerous texts available and the competitive market for textbook adoption, it is likely that several texts in most areas are recognized as complete and up to date. Consequently, the instructor should further identify the text that students will most favorably receive and, more importantly, most regularly use, since classroom discussion and textbook reading should complement rather than replace each other. It is this last consideration that can lead to a significant amount of angst during the process of textbook adoption.

It may seem to those responsible for textbook adoption that textbook publishers have intensified this angst. In looking through any current textbook, one will find a variety of pedagogical aids, organizers, visuals, and other enticing features

designed to make the textbook more attractive to the student. Additionally, most, if not all, current editions have accompanying materials such as CD ROMS and websites designed to both promote and enrich a student's usage of the text. With all these varying "extras," textbook adoption may seem to be a rather chaotic process, as opposed to the systematic and objective process one hopes it could be.

Some research has been done on how the various organizers and features that accompany texts can impact the reader. For example, in the 1980's a form of situational interest known as text-based interest was identified (Hidi & Baird, 1988). Text-based interest refers to the interestingness of textual information and is instigated by the interaction of textual features (e.g., including content, hands-on activities, novel stimuli, games and puzzles, fantasy, humor, and narratives) in conjunction with the individual reading the text (Hidi, 1990). According to Harp and Meyer (1997), text-based interest has been vital in suggesting that the extra features or "seductive illustrations" included within most texts positively contribute to an individual's emotional interest in a text (e.g., how positively a person responds to a text due to its entertainment value). However, such features do not necessarily add to an individual's cognitive interest (e.g., how well a text enables an individual to understand a text), which is mostly impacted by effectively written explanations and explanatory illustrations (Harp & Meyer, 1997). Due to the research on text-based interest, the instructor responsible for textbook adoption can be reasonably assured that the selected text will be favorably received since virtually all published texts contain the kinds of features and activities that Hart and Meyer (1997) note as triggering emotional interest. Assuming the text is well written,

organized, and effectively explanatory, the adopter can also be relatively certain that the text will spur cognitive interest.

What the textbook adopter cannot be assured of, however, is whether the student will actually read and use the text on a consistent basis, as text-based interest is not synonymous with the motivation to use a textbook. Research on text-based interest has capably addressed the question, "What makes a textbook interesting?" But, as any person who has taught a college course has witnessed, even the most interesting of texts vary in terms of student usage. Research on textbooks has not been able to answer the questions, "Who uses textbooks, and how do they use them?" As such, these questions serve as the framework and overall research question for the current study.

## **MOTIVATIONAL CONSTRUCTS POTENTIALLY RELATED TO TEXTBOOK USAGE**

Research on motivation may offer a number of relevant factors for those who are trying to decide whether students will use a textbook. As any introductory text in Educational Psychology or Motivation explains, motivated learners are also self-regulated in their learning efforts. Since textbook reading is something that is done outside of class, self-regulation is essential if textbook reading is to occur with regularity – regardless of how interesting the text is. Therefore, this study will examine the relationships between students' use of their text and several motivational constructs linked to self-regulation, including need for cognition, goal orientation, and self-determination. Each of these constructs and their relevance to textbook usage is briefly explained below.

### **Need for Cognition**

Need for cognition refers to an individual's "tendency to engage in and enjoy effortful thinking" (Cacioppo & Petty, 1982, p. 116). This construct appears to facilitate intrinsic motivation regarding information processing itself (Cacioppo, Petty, Feinstein, & Jarvis, 1996). Thus, those with high need for cognition tend to seek out information processing opportunities. Not only do they seek after information, but they process it in a way that is more scrutinized, elaborate, and integrated (Cacioppo, Petty, and Morris; 1983; Verplanken, 1993; Verplanken, Hazenberg, & Palenewen, 1992). Research such as this suggests that those students that regularly read assigned readings and are attracted to the extra features of a text may do so in part because of a high need for cognition. Furthermore, it is possible given the relationship of need for cognition and intrinsic motivation that information addressed in assigned readings may

help students further understand the importance of the knowledge of a discipline. For those with a high need for cognition, then, textbook reading may come to hold intrinsic value. Students with a high need for cognition would therefore be expected to more regularly use their texts.

### **Goal Orientation**

Tolman (1932) suggested that behavior is perpetually goal directed and that people are always approaching or avoiding goal objects. In the achievement motivation literature an individual's collective goal behaviors can be categorized into goal orientations. There are several models of goal orientation. Nicholls (1984) proposed task-involved and ego-involved orientations. Dweck and Legget's (1988) two orientations were labeled as learning and performance goals. Dweck and Legget (1988) subdivided performance goals into approach (positive judgments) and avoidance (negative judgments). Ames (1992) used the labels mastery and performance goals and continued Dweck and Legget's (1988) tradition of subdividing the performance goals into approach and avoidance.

The task, learning, or mastery orientation is characterized by an individual's focus on attempts to increase competence, to develop new skills, or to achieve a sense of mastery. Individuals with an ego or performance orientation focus on avoiding negative judgments from others or attaining positive judgments. Success is defined by besting others in terms of one's ability or performance for individual's high in performance approach. Individuals with a performance avoidance orientation focus on trying not to look incompetent.

Research examining the effects of these orientations on classroom outcomes have lead to an overwhelming endorsement of the mastery orientation. Students with a high mastery orientation adopt strategies that lead to deeper processing and higher degrees of self-regulation (Pintrich, 2000). In addition, these students are less likely to be impeded by anxiety about poor performance or failure. It is important to note that performance approach goals are not all bad. Wolters et al. (1996) found that for boring tasks a high performance approach orientation facilitated higher achievement. There have been no positive outcomes linked to the performance avoidance orientation. Based on the literature reviewed, in this study students with a high mastery orientation would be expected to more regularly use their texts. This is because reading and using the textbook should be perceived as fundamental to their orientation. Those with performance orientations may also be regular readers and users of texts. However, this would only be the case if textbooks are not recognized as

overly challenging. Furthermore, one might also expect to see deficits relative to those with mastery orientations in terms of *how* they read their texts along with the degree to which they use the various features and accompanying ancillary aids that accompany a textbook.

### **Self-determination theory (SDT)**

There are two viewpoints with regards to tendencies towards psychological growth. One is that human beings are autonomous, self-motivated, and have an innate propensity towards growth and unification (e.g., humanistic & cognitive developmental theories). The other is that we develop as a function of our environment or we simply react (e.g., operant conditioning). SDT provides a framework for integrating these two discrepant viewpoints (Ryan & Deci, 2002).

Research based on SDT has lead to the postulation of several sub-theories: Basic Needs Theory, Cognitive Evaluation Theory, as well as Organismic Integration Theory (OIT). The three psychological needs identified via Basic Needs Theory are: competence, autonomy, and relatedness. Conditions that allow an individual to meet these three needs are optimal for facilitating well-being (Basic Needs Theory). Another focus of SDT is to identify factors that facilitate versus forestall people's intrinsic motivation (Cognitive Evaluation Theory; CET). Note that the focus is not on what causes intrinsic motivation (IM) because IM is viewed as an evolved propensity present at birth, i.e., young children seek out novelty, strive to learn, and challenge themselves even in the absence of rewards. CET proposes that there are two primary cognitive factors that affect IM most: perceived locus of causality (i.e., self-determination) and perceived competence.

CET proposes that the functional significance of feedback will determine subsequent IM. Functional significance refers to the extent to which feedback is perceived as *controlling* versus *informational*. If feedback is perceived to have a controlling functional significance then IM is undermined. If feedback is perceived to have an informational functional significance then IM is enhanced.

Another result of the SDT research has been the identification of several distinct types of motivation (i.e., the "why" of actions). These types are presented as the self-determination continuum and are framed as an additional subtheory called organismic integration theory (OIT). Each subtype of motivation has its own unique set of consequences in terms of performance and well-being. Each subtype also differs, in terms of the degree to which the behavior has been internalized (taking in) and integrated (part of the self). Most are

familiar with the difference between intrinsic and extrinsic motivation, however, the SDT continuum further differentiates extrinsic motivation into four subtypes. Each subtype of extrinsic motivation varies in terms of its degree of autonomy. This sets the stage for understanding the internalization process as well as allowing one to examine the degree to which a behavior is controlled versus self-determined.

It is important to note that type of motivation should not be confused with level of motivation; it is quite possible for someone's level of motivation to be high due to any of the types of motivation on the SDT continuum. In addition, it is important to emphasize that motivation is multifaceted and that an individual's overall level of motivation may be a result of elevated levels of multiple subtypes of motivation. The subtypes of motivation are explained below (Ryan & Deci, 2002):

Amotivation means "without motivation." A person does not act at all (apathetic/uninterested) or acts without intent. Extrinsic motivation is subdivided into four types of regulation. External regulation is most commonly associated with operant conditioning. Introjected regulation is the next type of extrinsic motivation; here behavior is determined by whether or not the behavior will result in self-approval (ego enhancement). The third type of extrinsic motivation is identified regulation. Behavior is determined by whether the activity is personally valued with regards to one's personal goals. Integrated regulation is the fourth and most self-determined subtype of extrinsic motivation. Behaviors that have been brought into congruence with one's values, goals, and needs are viewed being regulated via integration. Intrinsic motivation refers to engaging in activities out of interest, because the activity is challenging, novel, or inherently appealing (i.e., enjoyable). This is in opposition to extrinsically motivated behaviors engaged in for contingent outcomes that are separable from a behavior.

Intrinsic motivation has been shown to result in higher creativity, deeper information processing, higher academic performance, and higher well-being (Benware & Deci, 1984; Ryan & Deci, 2000; Ryan & Grolnick, 1986; Vallerand, Fortier, & Guay, 1997). Consequently, one would expect that students with more self-determined motivation would report more regular use of their texts and reading approaches that reflect deeper processing. Specifically, one would expect that subscores for the three intrinsic types of motivation as well the more self-determined types of regulation such as integrated and identified would be associated with reading approaches that reflect deeper processing.

## METHODS

### Participants

Participants were 234 students enrolled in introductory Educational Psychology sections at a large regional university in the Southeastern United States during the 2003-2004 academic year. Participants during the Fall 2003 semester ( $n = 129$ ) were assigned one of the two selected textbooks. Participants in the Spring 2004 semester ( $n = 105$ ) were allowed to choose which of the two textbooks they would use.

### Materials

**Textbooks.** Two textbooks were used in the study: *Educational Psychology: Windows on Classrooms* (6<sup>th</sup> Ed.) (Eggen & Kauchak, 2004) and *Educational Psychology* (9<sup>th</sup> Ed.) (Woolfolk, 2004). The authors chose to use these two texts due to attributes they specifically observed for each. For example, the Eggen and Kauchak text provides a basic introduction to Educational Psychology that is written in a style that is well organized, easy to receive, and comprehend. Additionally, it contains a variety of ancillary activities and aids for enriching student learning. As noted on its publisher's website, this text is "recognized as very applied and practical ... (and) ... concise, giving *students* (italics added) exactly what they need to know in the course" (Pearson Prentice-Hall, 2006). In sum, it is the opinion of the authors that this text is most suitable for those with limited background and experience in education and psychology.

In addition to providing a good introduction to Educational Psychology, the Woolfolk (2004) text offers much depth and detail in the coverage of its topics. It also has a host of ancillary activities and aids. However, in the authors' estimation, the function of these features appears not just to enrich a student's learning but also appear to promote student application, synthesis, and evaluation of covered topics. As supported on its publisher's website, "This best-selling, classic text provides *beginning teachers* (italics added) with the tools and inspiration to become masters of their chosen profession. ... The most applied text on the market, this text is replete with examples, lesson segments, case studies, and practical ideas from experienced teachers" (Allyn & Bacon/Longman, 2006). As such, this text is more established in the industry and, in the opinion of the authors, appears to be the more elaborate, if not advanced, of the two texts. It could also be effectively incorporated into graduate level courses or courses where students possess some background in covered areas.

Given the basic (e.g., Eggen and Kauchak, 2004) versus more advanced (e.g., Woolfolk, 2004)

nature of the texts, the consideration of how both were used seems especially important in the current study. For example, it is conceivable that the motivational constructs considered in the current study would differentiate the selection and usage of each text. At the same time, both are widely used and popular textbooks that are deemed important and accurate sources of Educational Psychological information. Both effectively address the subject matter that was presented to all student participants, though the manner in which the content is addressed is different – as already acknowledged. Therefore, assuming that students regularly used their chosen textbook in concert with class attendance and participation, it is plausible that content learning could have been accentuated or remediated if the assumptions regarding the constructs and texts addressed in this paper are accurate.

**Need for Cognition Scale.** The Need for Cognition Scale (Cacioppo & Petty, 1982) is an 18-item self-report scale that measures the extent that the respondent needs to understand and explain events and tends to enjoy engaging in thinking and problem solving. Items are rated on a Likert-type scale ranging from – 4 (Very strong disagreement) to 4 (Very strong agreement) which yields one Need for Cognition index (NFC). Scores range from –72 to 72. Internal consistency for this scale was good in the current study (See Table 1).

**Patterns of Adaptive Learning Scales.** The Patterns of Adaptive Learning Scales (Midgley, et al., 2000) have a subset of items for measuring students' personal achievement goal orientations. The subset consists of 14 self-report items, which measure the degree of emphasis a student places on mastering a task versus performing better than peers. Items are rated on a Likert-type scale ranging from 1 to 5. From individual ratings, indices for the Mastery Goal Orientation (MGO), Performance Approach Orientation (PAp), and Performance Avoidance Orientation (PAv) are generated. Scores range from 5 to 25 for MGO and PAp. Scores range from 4 to 20 for PAv. Table 1 reveals that good internal consistency was reported for both MGO and PAp while acceptable internal consistency was reported for PAv.

**Academic Motivation Scale.** The Academic Motivation Scale (Vallerand, et al., 1992) is a 36-item self-report scale created to measure students' motivation for attending college. The scale is based on the Self-Determination Theory of motivation. The scale consists of students responding to statements on a Likert-scale ranging from 1 (does not correspond at all) to 7 (corresponds exactly). The scale breaks down into 8 subscales: amotivation (AMOT), external regulation (EXT), introjected

regulation (INTROJ), identified regulation (IDEN), integrated regulation (INTEG; items for this subscale were created by one of the authors), intrinsic to know (INTK), intrinsic stimulation (INTST), and intrinsic accomplishment (INTA). Each subscale ranges from 4 to 28. Good internal consistency was reported in the current study (see Table 1). Notice that Vallerand, et al., did not

include the motivation subtype of integrated regulation. Consequently, we created four items to assess integrated regulation (e.g., going to college is an important aspect of how I perceive myself). Items were modeled after integrated items from the Exercise Motivation Subscale by Li (1999) which assesses all eight subtypes of motivation on the SDT continuum.

Table 1. Subscale Reliabilities and Correlations from Fall and Spring Semesters (combined)

	1	2	3	4	5	6	7	8	9	10	11	12
1. AMOT	<b>.84</b>	.138	.011	-.101	-.051	-.203	-.178	.024	-.376**	-.343**	.064	.052
2. EXT	.044	<b>.82</b>	.420**	.408**	.466**	-.076	-.049	-.014	-.380**	-.149	.324**	.297**
3. INTROJ	-.117	.510**	<b>.85</b>	.301**	.550**	.387**	.524**	.172	-.131	-.012	.482**	.413**
4. IDEN	-.216*	.544**	.335**	<b>.61</b>	.516**	.325**	.231*	.183	-.025	.068	.273**	.203*
5. INTEG	-.148	.405**	.537**	.363**	<b>.73</b>	.377**	.412**	.296**	-.049	.003	.459**	.396**
6. INTK	-.220*	.067	.409**	.159	.159	<b>.87</b>	.798**	.685**	.477**	.353**	.304**	.177
7. INTA	-.246**	.058	.577**	.147	.290	.777**	<b>.87</b>	.513**	.400**	.348**	.357**	.241*
8. INTST	-.106	-.084	.244**	.075	.065	.667**	.633**	<b>.87</b>	.292**	.179	.348**	.315**
9. NFC	-.143	-.141	.150	-.017	-.005	.577**	.566**	.649**	<b>.89</b>	.389**	-.181	-.212*
10. MGO	-.331**	.020	.175	.195*	.255	.365**	.326**	.230**	.308**	<b>.87</b>	.098	.032
11. PAp	.193*	.274**	.321**	.086	.270**	.060	.169	.035	.112	-.003	<b>.90</b>	.772**
12. PAv	.150	.257**	.247**	.130	.254**	-.016	.037	-.022	.018	-.047	.810**	<b>.75</b>

Note: \* =  $p < .05$ ; \*\* =  $p < .01$ . Coefficient alpha estimates of internal consistency for each subscale collapsed across Fall and Spring semesters appear on the main diagonal in green. Listwise correlations for the Fall semester ( $N = 125$ ) appear below the diagonal and for the Spring semester ( $N = 101$ ) above the diagonal.

**Textbook Attitudes and Usage Questionnaire.** The Textbook Attitudes and Usage Questionnaire (TAUQ) is a 10-item questionnaire that was created in part for this study. The TAUQ was specifically created in order to explore a variety of aspects of students' textbook usage and reference, such as whether or not students had a text, why students purchased their particular text, whether they typically purchase textbooks, whether they read their text, how they read and utilized their text, the features they used, the features they found valuable, and their future usage and reference to the text. Responses to three of the TAUQ questions were considered in this study: 1) Which text did you purchase? 2) Did you read the recommended readings for this class? 3) Which best describes your approach to reading the text? The other seven items from the TAUQ were not addressed in the

current study because they were either specific to the usage of features that accompany each individual textbook, pertained to textbook usage in previous courses, refer to future reference to the text, or address attitudes or other attributes (i.e., price, length, perceived writing level of the text, etc.) regarding their purchased text not specific to the research questions of this study.

#### Procedure

At the beginning of the Fall 2003 semester, participants were assigned to purchase either the Eggen and Kauchak (2004) or Woolfolk (2004) text. Participants for the Fall semester were enrolled in one of four sections of Educational Psychology. These sections were taught on the following days and times: MWF 8-8:50, MWF 9:05-9:55, TR 8-9:15, and TR 9:30-10:45. Text assignment was

balanced across class times: one earlier section was assigned Woolfolk, the other early session Eggen and Kauchak; one 9 a.m. section was assigned Woolfolk; the other Eggen and Kauchak.

For the Spring 2004 semester, participants were allowed to choose the text they wished to purchase. Instruction in all of the included Educational Psychology sections addressed the same general topics including Introduction to Educational Psychology, Development, Abilities and Differences, Theories of Learning, Motivation, Assessment, and Classroom Management. Syllabi included assignments specific to each text for covered topics. Participants completed all instruments after taking their final exam.

## RESULTS

In the Fall semester, 111 students purchased a text, 10 did not purchase a text, and 8 did not provide a response. In the Spring semester, 87 purchased a text, 4 did not purchase a text, and 14 did not provide a response. Of the participants that purchased a text in the Fall semester, 36 purchased Eggen and Kauchak (2004), 64 purchased Woolfolk (2004), 20 purchased both texts, and 9 did not provide responses. Of the participants that purchased a text in the Spring semester, 53 purchased Eggen and Kauchak (2004), 45 purchased Woolfolk (2004), 4 purchased both texts, and 3 did not provide responses.

Examination of the relationships among the variables revealed significant correlations among

two different groups of indices (See Table 1). Moderate to strong positive relationships were seen among the NFC, INTK, INTA, INTST, and MGO indices. Small to moderate positive relationships were seen among the INTEG, IDEN, INTROJ, EXT, PAp, and PAv indices. The AMOT scores were not consistently related to scores on any of the other indices. These relationships are not surprising given the internally oriented or intrinsic nature of the first group (henceforth referred to as "internal set") and the externally oriented or extrinsic nature of the latter group (henceforth called the "external set").

As a result of these relationships, separate Multivariate Analyses of Variance (MANOVA) were run for each semester and each variable set with responses to the three considered TAUQ questions treated as fixed factors. Separate Analyses of Variance (ANOVA) were conducted for the AMOT index with responses to the three considered TAUQ questions treated as fixed factors. The results of each analysis are detailed below.

### **Which text did you purchase?**

No findings are reported here for fall semester since participants were assigned specific texts to purchase. Because the major focus of this question was the selection of specific texts, analyses included only students who purchased a single text, omitting those who purchased both texts or neither. Descriptive statistics for those that purchased Eggen and Kauchak (2004) and those that purchased Woolfolk (2004) for the Spring semester are reported in Table 2.

Table 2. Descriptive Statistics: "Which text did you purchase?" (Spring semester only)

	Eggen & Kauchak (2004)		Woolfolk (2004)	
	(n = 53)	M (SD)	(n = 45)	M (SD)
Internal Set	NFC	16.19 (18.6)		24.61 (18.4)
	INTK	20.23 (4.7)		21.23 (4.1)
	INTA	18.98 (5.0)		18.59 (5.3)
	INTST	14.88 (5.4)		14.61 (5.3)
	MGO	20.42 (3.2)		21.57 (2.8)
External Set	INTEG	21.61 (5.6)		21.40 (5.5)
	IDEN	24.14 (3.6)		23.89 (3.3)
	INTROJ	20.63 (5.4)		19.53 (6.0)
	EXT	21.20 (5.7)		19.67 (6.8)
	PAp	13.49 (4.8)		11.38 (3.9)
	PAv	11.57 (3.7)		9.93 (2.8)
Amotivation	AMOT	5.63 (3.2)		4.93 (3.7)

**Internal DV set.** For the Spring semester, a moderate multivariate effect (Pillai's Trace:  $F [5, 90] = 2.935, p = .017, \eta^2 = .14$ ) was observed where advances in this set of dependent variables were seen for those that purchased the Woolfolk (2004) text over those that purchased the Eggen and Kauchak (2004) text. There was one significant univariate effect for NFC ( $F [1, 94] = 4.933, p = .029, \eta^2 = .05$ ).

**External DV set.** For the Spring semester, small univariate effects were seen for PAp ( $F [1, 94] = 5.573, p = .020, \eta^2 = .056$ ) and PAv ( $F [1, 94] = 5.919, p = .017, \eta^2 = .059$ ) with higher scores for students that purchased the Eggen and Kauchak (2004) text.

**AMOT.** No significant effects were observed.

**Did you read the recommended readings for this class?**

The analyses addressing this question included those that purchased single and both texts. Those that did not purchase texts are also considered since each text was available through the library

reference desk. Descriptive statistics for those that read the readings and those that did not in the Fall and Spring semesters are reported in Table 3.

**Internal DV set.** For the Fall 2003 semester, a moderate multivariate effect (Pillai's Trace:  $F [5, 114] = 3.161, p = .010, \eta^2 = .122$ ) was observed favoring those that reported "No" over those that reported "Yes". A small univariate effect was seen for INTA ( $F [1, 118] = 6.556, p = .012, \eta^2 = .053$ ), with higher scores for those that reported "No." The multivariate trends reported for the Spring 2004 semester are reversed relative to the Fall 2003 semester as a moderate multivariate effect (Pillai's Trace:  $F [5, 93] = 3.984, p = .003, \eta^2 = .176$ ) was reported favoring those that responded "Yes" over those that responded "No". A moderate univariate effect ( $F [1, 97] = 18.639, p < .001, \eta^2 = .161$ ) was noted for MGO with higher scores for those that responded, "Yes."

**External DV set.** No significant effects were observed for either semester.

**Amotivation.** No significant effects were observed for either semester.

Table 3. Descriptive Statistics: "Did you read the recommended readings for this class?"

		Fall Semester		Spring Semester	
		Yes (n = 99)	No (n = 21)	Yes (n = 80)	No (n = 19)
		<i>M</i> ( <i>SD</i> )			
Internal Set	NFC	14.31 (21.4)	18.19 (15.5)	20.66 (18.9)	15.68 (19.1)
	INTK	20.17 (5.1)	21.43 (4.4)	21.09 (4.6)	18.95 (3.3)
	INTA	18.21 (5.3)	21.45 (4.9)	19.21 (5.2)	17.37 (3.9)
	INTST	14.19 (5.9)	14.14 (4.9)	14.88 (5.8)	13.95 (3.5)
	MGO	21.60 (2.8)	21.19 (2.2)	21.63 (2.8)	18.58 (2.5)
External Set	INTEG	22.37 (4.5)	23.10 (4.3)	21.22 (5.6)	23.06 (4.0)
	IDEN	24.31 (2.8)	24.29 (3.2)	23.91 (3.6)	24.35 (2.6)
	INTROJ	20.87 (5.1)	22.29 (5.2)	20.14 (5.9)	20.82 (3.1)
	EXT	20.56 (4.8)	22.57 (5.5)	20.30 (6.5)	22.59 (4.1)
	PAp	12.65 (4.5)	13.86 (5.6)	12.68 (4.5)	12.29 (4.3)
	PAv	11.14 (3.5)	12.00 (4.1)	10.80 (3.4)	11.00 (3.0)
	Amotivation	4.96 (2.3)	4.10 (.30)	4.93 (2.3)	6.89 (4.6)

**Which best describes your approach to reading the text?**

The analyses addressing this question only included those who had responded "Yes" to the previous research question, "Did you read the recommended readings for this class". Based on the responses to the current question, "Which best describes your approach to reading the text?" three groups were created. Group 1 consisted of those that indicated skimming or reviewing concepts for further clarification. Group 2 indicated that they simply read assigned passages. Group 3 indicated that they read assigned passages while highlighting and making notes. Descriptive statistics can be found in Table 4.

**Internal DV set.** No significant effects were observed for the Fall semester. For the Spring 2004 semester, a moderate multivariate effect (Pillai's

Trace:  $F [10, 148] = 2.241, p = .018, \eta^2 = .132$ ) was observed, favoring higher levels of reading (i.e., Group 3). There were also univariate effects NFC ( $F [2, 77] = 5.271, p = .007, \eta^2 = .120$ ), INTA ( $F [2, 77] = 3.178, p = .047, \eta^2 = .076$ ), and for MGO ( $F [2, 77] = 3.853, p = .025, \eta^2 = .091$ ) in favor of those in Group 3 over Groups 1 and 2.

**External DV set.** No significant multivariate effects were observed for the Fall semester. A small univariate effect was observed for EXT, ( $F [2, 96] = 3.104, p = .049, \eta^2 = .061$ ), favoring Group 2. There was a significant multivariate effect for the Spring, ( $F [2, 148] = 2.425, p = .007, \eta^2 = .164$ ), where students in Group 3 tended to exhibit lower scores compared to those in Groups 1 and 2.

**Amotivation.** No significant effects were observed for either semester.

Table 4. Descriptive Statistics: "Which best describes your approach to reading the text?"

		Fall Semester			Spring Semester		
		Group 1 (n = 38)	Group 2 (n = 31)	Group 3 (n = 30)	Group 1 (n = 25)	Group 2 (n = 42)	Group 3 (n = 13)
		<i>M</i> ( <i>SD</i> )					
Internal Set	NFC	14.39 (21.2)	12.55 (24.4)	16.03 (19.0)	13.96 (17.0)	20.55 (16.6)	33.92 (23.6)
	INTK	19.87 (5.8)	20.23 (5.0)	20.50 (4.3)	21.08 (4.2)	20.71 (5.0)	22.31 (4.2)
	INTA	17.16 (5.8)	18.52 (6.1)	19.22 (3.7)	19.60 (5.0)	18.10 (5.2)	22.08 (5.0)
	INTST	13.82 (6.2)	14.06 (6.0)	14.80 (5.4)	15.16 (5.2)	14.69 (6.1)	14.92 (6.5)
	MGO	21.58 (2.7)	21.42 (2.6)	21.80 (3.1)	20.92 (2.8)	21.48 (2.9)	23.46 (1.8)
External Set	INTEG	21.79 (4.8)	23.83 (4.0)	21.67 (4.7)	21.52 (5.6)	21.65 (5.6)	19.23 (5.6)
	IDEN	24.05 (2.9)	24.23 (2.4)	24.73 (3.2)	23.80 (3.3)	24.02 (3.7)	23.77 (4.0)
	INTROJ	19.87 (5.2)	21.93 (5.0)	21.10 (5.0)	20.24 (5.8)	19.14 (6.3)	23.23 (3.8)
	EXT	19.38 (5.0)	22.23 (3.3)	20.40 (5.6)	21.60 (5.0)	20.44 (6.2)	17.31 (9.3)
	PAp	11.36 (4.5)	13.63 (4.1)	13.33 (4.6)	13.92 (4.1)	12.33 (4.9)	11.46 (3.8)
	PAv	10.44 (3.6)	12.00 (3.3)	11.20 (3.3)	11.72 (3.5)	10.67 (3.5)	9.46 (3.0)
Amotivation	AMOT	4.98 (2.0)	4.94 (2.6)	4.97 (2.3)	4.64 (1.2)	5.23 (3.0)	4.46 (1.4)

## DISCUSSION

In terms of selection of text, students with higher scores on the internal dependent variable set were more likely to choose Woolfolk (2004) over Eggen and Kauchak (2004). In contrast, students with higher scores for performance approach and performance avoidance orientations were more likely to choose the Eggen and Kauchak (2004) text. This makes sense given the authors' opinion

that the Woolfolk text offered more depth and detail in the coverage of its topics in contrast to Eggen and Kauchak text (2004), which was presumed to emphasize a more basic introduction to Educational Psychology.

It may be that students recognize these differences as they are considering which text to purchase. As such, those students who scored higher on the internal dependent variable set were

attracted to the features of the Woolfolk text. At the same time, those with performance approach and performance avoidance orientations may have found the nature and number of the features of the Woolfolk text threatening. Those with performance orientations may have regarded this text as threatening their ability to successfully illustrate and display their quick reading and completion of assigned content. Those with performance avoidance orientations may have worried that the Woolfolk text would cause them to struggle and even fail in completing and understanding the assigned readings.

The next question of interest addressed differences between students who read versus did not reading the assigned readings. Examination of the Fall semester data revealed a somewhat vexing finding in that students who did not read the assigned readings had higher scores for the internal variable set. As further analyses noted, this finding stems from intrinsic motivation to accomplish. The data from the Spring semester yielded the opposite in that students who read the assigned readings had higher scores for the internal data set. Additional analysis suggests that this is most strongly the result of these participants' mastery orientations. These findings pertaining to the second question are somewhat perplexing. We feel the reason for the differing trends in the two semesters may have to do with the role of choice. To be sure, choice is fundamental to intrinsic motivation, as it has long been regarded as an important contributor to supporting constructs such as autonomy and self-determination (Deci & Ryan, 1985). Our analyses support the possibility that giving students the opportunity to choose their texts in the spring semester may have contributed to these trends. In the Fall semester, students were assigned one of the two texts whereas in the Spring semester students were allowed to choose their text. It may be that in the Fall semester the assigned text did not correspond with students' motivational orientations. Specifically, those that were high in the variables addressed via the internal variable set may have been assigned the Eggen and Kauchak (2004) text. Further bolstering this possibility are secondary analyses on the first question for those in the Fall semester. Specifically, no significant differences were found between assigned textbooks for any of the variables in the internal set.

The last question addressed was differences for students' approaches to reading the text. Three groups were created which could be viewed on a continuum from least effort and attention given to most: 1) skimming or reviewing, 2) reading, and 3) reading while highlighting or making notes.

Analyses of the internal variable set revealed that students in Group 3 exhibited significantly higher scores. Specifically, statistically significant advances were found for need for cognition, intrinsic motivation towards accomplishment, and mastery orientation, all with higher scores for students in Group 3.

Although there were minimal differences among groups for external variable set from the Fall, statistically significant differences were found for external regulation. Group 2 had the highest scores. The Spring data revealed more variation for the variables of the external variable set wherein scores for students in Group 3 were consistently and statistically lower than Groups 1 and 2 for all but one of the external variables.

The interpretation of the findings from assessing approaches to reading revealed that higher scores on internal variables were associated with more effortful and attentive reading. While students with higher scores on external variables were more likely to read the assigned readings, they did not read with the same attention to detail that students with high scores on the internal variables read.

These findings regarding the third question are congruent with previous research, as students who are mastery oriented tend to adopt strategies that lead to deeper processing and higher degrees of self-regulation (Pintrich, 2000). Students who are more intrinsically motivated have been shown to demonstrate deeper information processing and higher academic performance (Benware & Deci, 1984; Ryan & Deci, 2000; Ryan & Grolnick, 1986; Vallerand, Fortier, & Guay, 1997). Students high in need for cognition not only seek out information processing opportunities but also tend to do so in a way that is more scrutinized, elaborate, and integrated (Cacioppo, Petty, & Morris, 1983; Verplanken, 1993; Verplanken, Hazenberg, & Palenewen, 1992). The fact that those in Group 3 report both highlighting and taking notes while reading supports these attributes that have been noted for the variables included in the internal set.

## CONCLUSION

Overall, it appears that attendance to motivational constructs linked to self-regulation such as need for cognition, self-determination theory, and goal orientations can be important in helping instructors to make sense of whether a textbook will be used and how it will be used. This could be especially true in instances or contexts where constructs like the ones considered in this study could be restrained or heightened. Therefore, instructors teaching at a school with open-enrollment or teaching a course for a fast track

alternative certification (i.e., instances in which a low need for cognition, performance orientations, and greater external regulation might be reasonably expected) may want to choose more basic texts. In contrast, instructors teaching at highly selective colleges or teaching an honor's section (i.e., contexts in which a high need for cognition, mastery orientations, and greater intrinsic motivation might be reasonably expected) may benefit from choosing a more advanced text. The impact of these motivational constructs may be moderated when students do not have a choice and are not involved in the selection of a text as these constructs were primarily linked to textbook usage under conditions

of choice. Hence, instructors could individualize texts by allowing students to choose from two or more texts with contrasting approaches. To be sure, in addition to choice there are a variety of factors that may also be linked to textbook selection (e.g., cost and accessibility) and textbook usage (e.g., time demands, course difficulty, and interest in course content) that should be explored in future research. Nonetheless, findings from this study support the conclusion that efforts on the part of instructors to determine the texts that are most congruent with student motivational orientations can increase the probability of a text's usage.

## REFERENCES

Allyn & Bacon/Longman (2006). *Educational Psychology (with MyLabSchool)*, 10/E. Retrieved from <http://www.ablongman.com/catalog/academic/product/0,1144,0205493831,00.html>

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, 84, 261-271.

Benware, C., & Deci, E. L. (1984). Quality of learning with an active versus passive motivational set. *American Educational Research Journal*, 21, 755-765.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.

Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, 42, 116-131.

Cacioppo, J. T., Petty, R. E., Feinstein, J. A., & Jarvis, W. B. G. (1996). Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition. *Psychological Bulletin*, 119, 197-253.

Cacioppo, J. T., Petty, R. E., & Morris, K. J. (1983). Effects of need for cognition on message evaluation, recall, and persuasion. *Journal of Personality and Social Psychology*, 45, 805-818.

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95, 256-273.

Eggen, P., & Kauchak, D. (2004). *Educational Psychology: Windows on Classrooms* (6<sup>th</sup> Ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

Harp, S. F., & Mayer, R. E. (1997). The role of interest in learning from scientific text and illustrations: On the distinction between emotional interest and cognitive interest. *Journal of Educational Psychology*, 89, 92-102.

Hidi, S. (1990). Interest and its contribution as a mental resource for learning. *Review of Educational Research*, 60, 549-571.

Hidi, S., & Baird, W. (1988). Strategies for increasing text-based interest and students' recall of expository texts. *Reading Research Quarterly*, 23, 465-483.

Nicholls, J. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, 91, 328-346.

Pearson Prentice-Hall (2006). *Educational Psychology: Windows on Classrooms with Teacher Prep Access Code Package*, 7/E. Retrieved Sept. 15, 2006 from <http://vig.prenhall.com/catalog/academic/product/0,1144,0132227428,00.html>

Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, M. Zeidner (Eds.), *Handbook of self-regulation: Theory, research, and applications* (pp.451-502). San Diego, CA: Academic Press.

Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic dialectical perspective. In R. M. Ryan & E. L. Deci (Eds.), *Handbook of Self-Determination Theory* (pp. 3-33). Rochester, NY: University of Rochester Press.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25, 54-67.

Ryan, R. M., & Grolnick, W. S. (1986). Origins and pawns in the classroom: Self-report and projective assessments of individual differences in children's perceptions. *Journal of Personality and Social Psychology*, 50, 550-558.

Tolman, E. C. (1932). *Purposive Behavior in animals and man*. New York: Century.

Vallerand, R. J., Fortier, M. S., & Guay, F. (1997). Self-determination and persistence in a real-life setting: Toward a motivational model of high-school drop out. *Journal of Personality and Social Psychology*, 72, 1161-1176.

Verplanken, B. (1993). Need for cognition and external information search: Responses to time pressure during decision-making. *Journal of Research in Personality*, 27, 238-252.

Verplanken, B., Hazenberg, P.T., & Palenewen, G.R. (1992). Need for cognition and external information search. *Journal of Research in Personality*, 26, 128-136.

Woolfolk, A. (2004). *Educational Psychology* (9<sup>th</sup> Ed.). Boston: Allyn and Bacon.

Wolters, C., Yu, S., Pintrich, P. R. (1996). The relation between goal orientation and students' motivational beliefs and self-regulated learning. *Learning and Individual Differences*, 8, 211-238.

---

**W. Pitt Derryberry** is an Associate Professor at Western Kentucky University. He teaches educational psychology, adolescent psychology, and the psychology of morality. His research interests include the moral psychology of adolescents and young adults, moral education, and intellectual abilities and differences. Questions and comments about the manuscript or his research can be forwarded to him at [pitt.derryberry@wku.edu](mailto:pitt.derryberry@wku.edu).

**Steven R. Wininger** is an Associate Professor of Psychology at Western Kentucky University. He teaches educational psychology, psychology of motivation, and sport psychology. His research interests include measurement and motivation in education, exercise, and sport

---